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EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/644,450
Filing Date: August 20, 2003
Appellant(s): SCHMIDT ET AL.

Kristopher K. Hullibarger
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 5-19-08 appealing from the Office action
mailed 11-30-07.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 26,28,29,31,34, 36-39,41,42, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spitzer et al. (5,340,900).

Spitzer et al. disclose preparations of polyurethane products prepared from hardener composition constituent a) meeting the first polyols of appellants' claims, Lupranol 2042 meeting the second polyol of appellants' claims, Jeffamines, including Jeffamine D2000, meeting the curing component of appellants' claims, and blowing agents including water (see column 3 lines 18-58, column 6 lines 32-39, column 10 lines 38-42, and example 6, as well as, the entire document).

Spitzer et al. differs from appellants' claims in that the ranges of amount values for the hardening composition constituent a) of Spitzer et al. do not correspond exactly to those for the first polyol of appellants' claims. However, Spitzer et al.'s disclosure (see again column 3 lines 18-58) does indicate overlap with the ranges of values of appellants' claims. Accordingly, it would have been obvious for one having ordinary skill in the art to have varied the amount of the hardening composition constituent a) within

the teachings of Spitzer et al. for the purpose of controlling its hardening effect in order to arrive at the products and processes of appellants' claims with the expectation of success in the absence of a showing of new or unexpected results.

Spitzer et al. differs from appellants' claims in that densities as claimed are not exemplified. However, Spitzer et al.'s own teaching (see again column 6 lines 32-39) identifies employment of blowing agent, particularly water, and control of its employment for control of its effect. Accordingly, it would have been obvious for one having ordinary skill in the art to have controlled the amount of water blowing agent within the teachings of Spitzer et al. for the purpose of controlling the pore forming and, accordingly, densification effects in the products realized in order to arrive at the products and processes of appellants' claims with the expectation of success in the absence of a showing of new or unexpected results.

Spitzer et al. differs from appellants' claims in that Index values of 25-60 are not specifically exemplified. However, Spitzer et al. discloses the employment of customary reactive ratios in the operation of its invention for the purpose of achieving their disclosed reactive effects (see again column 7 lines 55-63). Accordingly, it would have been obvious for one having ordinary skill in the art to have operated at other customary Index values within the accommodations of Spitzer et al. beyond the exemplified ranges of Index values highlighted by Spitzer et al. for the purpose of controlling well known impacts on properties of the finally realized products, such as hardness and elongation, in order to arrive at the products and processes of appellants' claims with the expectation of success in the absence of a showing of new or unexpected results.

Additionally, it has long been held that where the general conditions of the claims are disclosed in the prior art, discovering the optimal or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233; *In re Reese* 129 USPQ 402 . Further, a prima facie case of obviousness has been held to exist where the proportions of a reference are close enough to those of the claims to lead to an expectation of the same properties. *Titanium Metals v Banner* 227 USPQ 773. **(see also MPEP 2144.05 I)**. Similarly, it has been held that discovering the optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272,205 USPQ 215 (CCPA 1980).

(10) Response to Argument

Appellants' arguments have been considered. However, rejection is maintained.

It is not seen that the rejection fails based on the Index values of appellants' claims.

First, reading the pertinent elements from the indicated citation from column 7 of Spitzer et al. without the material in parenthesis, "The reaction mixtures...comprise the polyisocyanate in the customary amount, in general corresponding to an isocyanate number of between 70 and 130", it is maintained to be evident that the range Index values set forth by Spitzer et al. are provided as guidance in further determining useful reactant ratios from the generic provision of "customary amounts". From this disclosure examiner maintains that customary reactant ratios beyond the general numerical ranges

disclosed for guidance are provided for by the teachings and fair suggestions of the cited Spitzer et al. patent.

Second, it is maintained that the holdings of *Titanium Metals v Banner 227* USPQ 773 apply in the instant situation. The isocyanate Index (hereon Index) is a value relevant to most urethane synthesis operations. It is the ratio of isocyanate reactive groups to isocyanate groups in a reaction system. As Index values fall below the 100, a 1:1 stoichiometric ratio, products containing unreacted isocyanate reactive materials result. The effects of changes in Index being well studied in urethane synthesis operations, it is understood that lower Index values correspond to better elongation and tensile strength as opposed to higher Index values which correspond to better heat strength and aging stability and greater hardness. It is maintained that, in accordance with the holdings of *Titanium Metals v Banner 227* USPQ 773, the stoichiometric proportions of Spitzer et al. reaching .7:1 are close enough to the .6:1 endpoint of appellants' claims to lead to an expectation of the same properties. Those same expected properties would be better elongation/elasticity and better tensile and tear strength.

Third, and in addition to the above, it is held and reiterated that there are well studied benefits associated with control of Index values. It is within the well studied knowledge of the ordinary practitioner that operation at lower Index values results in products containing unreacted isocyanate reactive groups, products that are tacky, have better elongation/elasticity, and better tensile and tear strength. Within Spitzer et al.'s own teaching there is an interest in preparations having good mechanical strength and

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cracking resistance (column 3 lines 1-5) and optimizing these properties within their reactive formulations so as to avoid the employment of environmentally hazardous and slowly exuding plasticizers for their elasticizing effect (column 9 lines 50 et seq.). Accordingly, it is held and maintained that it would have been obvious from within Spitzer et al.'s own teaching to have controlled Index values beyond the generally provided range of Index values specified for the purpose of optimizing the specifically desired effects of product elasticity, mechanical strength and cracking resistance identified by Spitzer et al. in order to arrive at the products and processes of appellants' claims with the expectation of success. Though the ordinary practitioner may be hindered in relying on lowered Index values to address all elasticity and mechanical strength needs due to concerns with inadequate product formation arising from excessive amounts of unreacted isocyanate reactive materials in formed products, balancing and optimizing these known effects associated with reducing Index values would only involve routine experimentation from what is taught or fairly disclosed by the teachings of Spitzer et al.

Appellants' have not met their burden of showing new or unexpected results sufficient to overcome the rejection of record.

When considering showings of new or unexpected results, the following need to be considered:

Results Must be Unexpected:

Unexpected properties must be more significant than expected properties to rebut a prima facie case of obviousness. *In re Nolan* 193 USPQ 641 CCPA 1977.

Obviousness does not require absolute predictability. *In re Miegel* 159 USPQ 716.

Since unexpected results are by definition unpredictable, evidence presented in comparative showings must be clear and convincing. *In re Lohr* 137 USPQ 548.

In determining patentability, the weight of the actual evidence of unobviousness presented must be balanced against the weight of obviousness of record. *In re Chupp*, 2 USPQ 2d 1437; *In re Murch* 175 USPQ 89; *In re Beattie*, 24 USPQ 2d 1040.

Claims Must be Commensurate With Showings:

Evidence of superiority must pertain to the full extent of the subject matter being claimed. *In re Ackerman*, 170 USPQ 340; *In re Chupp*, 2 USPQ 2d 1437; *In re Murch* 175 USPQ 89; *Ex Parte A*, 17 USPQ 2d 1719; accordingly, it has been held that to overcome a reasonable case of prima facie obviousness a given claim must be commensurate in scope with any showing of unexpected results. *In re Greenfield*, 197 USPQ 227. Further, a limited showing of criticality is insufficient to support a broadly claimed range. *In re Lemin*, 161 USPQ 288. See also *In re Kulling*, 14 USPQ 2d 1056.

Appellants have not met their burden of making a factually supported showing of new or unexpected results associated with differences in their claims that are commensurate in scope with the scope of their claims.

Appellants' evidence and showings of new or unexpected results, including paragraph [0027] of their supporting disclosure, are insufficient in overcoming the

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instant rejection because a fact based showing of new or unexpected results attributable to the Index values of their claims that is commensurate in scope with the scope of the claims has not been set forth. Additionally, it has not been shown or demonstrated that the results that have been shown and/or discussed are in fact new or unexpected.

As to appellants' arguments pertaining to distinction based on density, it is maintained that rejection is proper and does not fail. Density, which is directly controlled by blowing agent concentration and amount, is maintained to be a variable provided for by the teachings of Spitzer et al. Though Spitzer et al. is not specifically concerned with the ranges of density values associated with articles produced from the practice of their disclosed invention, they do provide guidance for practicable amounts of blowing agent, particularly water, that may be used in the practice of their invention, and control of the amount of blowing agent has a direct effect on densities of products formed in polyurethane synthesis operations. Rejection as to blowing agent amounts is maintained because reference teaches inclusion of additives such as blowing amounts, in particular water, in amounts of up to 30% by weight. Reduced density of articles realized is not seen to be an unexpected result attributable to employment of blowing agent in the amounts as claimed. Appellants' have not persuasively demonstrated unexpected results for the employment of blowing agents in the amounts of their claims in the compositions as claimed. Appellants have not factually demonstrated results associated with their products and processes based on blowing agent amount/ranges of density values achieved that are more significant than expected properties of expansion

and cellularity that would be expected. Further, any showings of results would need to be commensurate in scope with the scope of the claims, and such a necessary showing is not seen.

It is additionally noted Spitzer et al. particularly highlights the employment of water as the blowing agent when blowing agents are used, which is the very blowing agent employed by appellants' in their example provided in paragraph [0033] of their supporting disclosure. Also, the amount of water used in this example falls within the range of 0-30% percent by weight provided for by Spitzer et al.

Further, regarding cellularity, the effect of being open celled is an attribute intrinsically associated with the formulations used in the making of the products of the instant concern. Though Spitzer et al. has not exemplified formation of open-celled articles, formation of such an open celled product, as defined by appellants' claims, would have been an intrinsic effect associated with the formulational make-ups provided for by the full teaching of Spitzer et al.

Moreover, it is noted that appellants' claims do not set forth degrees of open cell contents in their claims. Since even closed cell foams have some degree of open cells, it is not seen that appellants' claims distinguish over Spitzer et al. based on this claim element regardless of whether open or closed celled products are formed upon foaming in the preparations of Spitzer et al. Accordingly, distinction based on the effect of being "open-celled" as defined by appellants' claims is not sufficient in distinguishing the invention of the claims.

Appellants' arguments pertaining to allegations of reduced dripping as a result of their invention have been considered. However, these allegations have not been reflected by a fact based showing of new or unexpected results that are commensurate in scope with the scope of the claims attributable to differences in the claims that .

Appellants' arguments pertaining to "low" water absorption of the articles as a result of the Index values as claimed have been considered. However, these allegations have not been reflected by a fact based showing of new or unexpected results attributable to differences in the claims with further demonstration that the results are, in fact, unexpected and more significant than what would be expected. Water absorption is seen to be an attribute associated with the compositional and structural features of the preparations formed which have been addressed in the rejection and arguments above. Without distinction being shown in chemical or physical features of the preparations of the instant concern, difference based on this claim element alone is not seen to be evident. Furthermore, it is held and maintained that the relative term "low" carries little or no effect of a limitation in the patentable sense, and distinction based on this element of the claims is not seen to be evident.

Appellants' have not demonstrated patentability of their formulated resin component claims based on the spraying applications of their disclosure. Polyurethane products have not been demonstrated to be different based on means of their formation as claimed. Further, the methods are not differentiated by the means of providing as set forth in the claims. That claim 41 additionally requires spraying the components exemplifies the fact that appellants' broadest claims do not require spraying.

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Additionally, appellants do not set forth specifics of their spraying operations which differentiate over the processing operations disclosed by Spitzer et al. (see again column 9 lines 9-20, particularly, lines 18-20).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

John M. Cooney, Jr.

/John Cooney/

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QAS, TC1700